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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,080	11/02/2001	Richard W. Heath	708-1005	5301

7590 10/04/2004

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EXAMINER
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LEUNG, CHRISTINA Y

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/008,080	Applicant(s) HEATH ET AL.	
	Examiner Christina Y. Leung	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 5 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, claim 6 recites "splitting the waveband into a second plurality of wavebands, *equal to or less than the number of the second plurality of wavebands*" in lines 3-5 of the claim. This limitation is unclear because a plurality of anything cannot be less than the number of itself; based on Applicants' specification (on page 3, lines 28-29, for example), Examiner respectfully suggests that Applicants change the phrase to "equal to or less than the number of the *first* plurality of wavebands."

Further regarding claim 6, claim 6 recites “to determine the instantaneous power in each of *the second plurality of wavelengths*” in lines 9-10 of the claim. There is insufficient antecedent basis for this limitation in the claim, since the claim previously recites a “second plurality of wavebands,” not a “second plurality of wavelengths.” Based on Applicants’ specification (on page 4, lines 4-6, for example) and also Applicants’ claim 5, Examiner notes that Applicants may have intended to recite determining the instantaneous power in *each wavelength component of each waveband* in the second plurality of wavebands instead.

Claims 7 and 8 depend on claim 6 and are also indefinite because of the above reasons.

Regarding claim 9, claim 9 similarly recites “splitting the waveband into a second plurality of wavebands, equal to or less than the number of the second plurality of wavebands” in lines 4-5 of the claim, and “to determine the instantaneous power in each of the second plurality of wavelengths” in lines 10-11 of the claim. Therefore, claim 9 is also indefinite for the same reasons as given above with regard to claim 6.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Stephens et al. (US 6,563,614 B1).

Regarding claim 1, Stephens et al. disclose a method (Figures 5a-c and 6) for detecting power transients in a signal wavelength carried by an optical transmission medium in a band consisting of a first plurality of wavebands (i.e., an optical wavelength multiplexed signal having a first plurality of channels) comprising:

dividing the band into a second plurality of wavebands (demultiplexer 28d divides the multiplexed signal into a second plurality of wavebands called sub-bands), equal to or less than the first plurality (see also discussion below with regard to claim 2), and

detecting power transients within each of the second plurality of wavebands (using a plurality of sub-band photodetectors 34s; column 4, lines 24-52; column 8, lines 51-56).

Although Stephens et al. do not use the word “transients” in describing the system they disclose, they do disclose that the sub-band photodetectors detect power levels from each band continuously; it would be well understood that the disclosed photodetectors therefore detect the changes and variations in power (i.e., power transients) over time in each band.

Regarding claim 10 in particular, Stephens et al. disclose an optical signal whose power transient has been detected by the above method, since they clearly disclose that the system shown in Figures 5a-c and 6, for example, receives and processes an optical signal.

Regarding claim 2, Stephens et al. disclose that the number of second wavebands is less than the first plurality. Examiner notes that Stephens et al. specifically disclose that the sub-bands do not overlap (column 14, lines 8-10). Therefore, Stephens et al. disclose that the sub-bands are groups of channels wherein the number of sub-bands/second wavebands necessarily cannot be greater than the number of channels/first wavebands. Furthermore, Stephens et al. also disclose that at least one of the sub-bands contains a plurality of the channels (column 4, lines

24-29). Therefore, the number of sub-bands/second wavebands necessarily cannot be equal to the number of channels/first wavebands either, and the number of second wavebands is thus necessarily less than the number of first wavebands.

Regarding claims 3 and 4, Stephens et al. disclose that the second set of wavebands is unrelated to the channels in the system by wavelength alignment or waveband shape, since they particularly disclose that the second set of wavebands is instead determined by the characteristics of the particular amplifier or amplifiers used in the system (which would not be necessarily aligned to or specifically shaped to the channels; column 5, lines 25-35).

***Allowable Subject Matter***

6. Claims 5 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 6-9 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, including Stephens et al., does not specifically disclose or fairly suggest a system or method including the limitations, elements, and steps as recited in claim 5 (including the limitations of claim 1 on which it depends) and claims 6 and 9, as well as those claims may be understood with respect to 35 U.S.C. 112 discussed above. In particular, although Stephens et al. disclose dividing a first plurality of wavebands into a second plurality of wavebands and detecting power transients within each of the second plurality of the wavebands, the prior art does not specifically disclose or fairly suggest a system or method further including deriving a

set of simultaneous equations based on the detected power of the second wavebands and determining the instantaneous power in each wavelength component of each waveband of the second plurality of wavebands by solving those equations.

Kang et al. (US 6,347,169 B1) generally disclose a system for monitoring channels in a wavelength division multiplexed signal wherein the power of each channel is determined from the detected power of two output optical signals corresponding to each channel (column 2, lines 18-40). However, they do not specifically disclose or suggest the combination of elements and steps recited in claims 5, 6, or 9, particularly including splitting a multiplexed signal into a second plurality of wavebands equal to or less than the number of first wavebands, since Kang et al. disclose splitting a multiplexed signal having N wavebands into  $2N+2$  outputs (column 3, lines 7-13).

Seydnejad et al. (US 2002/0114029 A1) generally disclose a system for estimating stimulated Raman scattering error and estimating average power for channels in a wavelength division multiplexed signal using dither and pilot tones (page 1, paragraphs [0007]-[0010]).

### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 2633